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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,448	06/30/2003	Lev Smolyar	P-5750-US	7139
49444	7590	10/25/2006	EXAMINER	
PEARL COHEN ZEDEK LATZER, LLP 1500 BROADWAY, 12TH FLOOR NEW YORK, NY 10036			PATHAK, SUDHANSHU C	
			ART UNIT	PAPER NUMBER
			2611	

DATE MAILED: 10/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/608,448

Applicant(s)

SMOLYAR ET AL.

Examiner

Sudhanshu C. Pathak

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on June 30<sup>th</sup>, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on June 30<sup>th</sup>, 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. Claims 1-to-29 are pending in the application.

***Specification***

2. The disclosure is objected to because of the following:

The specification on Page 5, lines 24-30 should be placed on line 10 after "...block..." i.e. "...block format (format 1) in order to have the same transmission time as the longer format (format 2)...".

Appropriate correction is required.

***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-29 are rejected under 35 U.S.C. 101.

In regards to Claims 1-29, the claims disclose a process (method) that manipulates only number, abstract concepts or ideas or representing any of the foregoing, the claims are not being applied to an appropriate subject matter.

In regards to Claim 27 (independent Claim), Claim 27 merely discloses a computer program (functional descriptive steps), producing no practical application, and do not define any structural and functional interrelationship between the computer programs and other claimed elements of a computer which permit the computer program functionality to be realized, thereby producing no tangible, concrete and useful results. (See Pages 52-54 of the Interim Guidelines).

In regards to Claims 1, 7 & 24 (independent Claims), the claims call for a seemingly patentable process but in reality seeking patent protection on an abstract idea in the form of a computer program as evidenced by Claim 27.

In regards to Claims 13 & 18 (independent claims), the claims call for nothing but a processor to carry out a mathematical calculation implemented on a processor (as a computer program) as evidenced by claims 17 & 23 respectively and claim 27.

In regards to Claims 2-6, 8-12, 14-17, 19-23, 25-26 & 28-29 are inherently rejected as being dependent on above rejected independent claims.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 13-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

7. In regards to Claim 13 & 18 (Independent Claims), the claims are single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197

(Fed. Cir. 1983) (A single means claim, which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor.). When claims depend on a recited property, a fact situation comparable to Hyatt is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor.

8. In regards to Claims 14-17 & 19-23 are inherently rejected as being dependent on above rejected independent claims.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

10. Claims 1-2, 4-5, 7, 9-11 (method) & 13, 15-16, 18, 20-22 (device) & 27-29 (storage medium) are rejected under 35 U.S.C. 102(a) as being anticipated by Chi et al. (WO 02/060083 A2).

In regards to Claims 1, 13 & 27, Chi discloses a method (device / storage medium) comprising: calculating a plurality of format metric values based on a coding rate for a plurality of calculated Viterbi metric values (Abstract, lines 1-8 & Specification, Page 2, Paragraph 9 & Specification, Page 8, Paragraph 29, Eq. 6 & Specification, Page 12, Paragraph 46 & Specification, Page 13, lines 1-9 &

Specification, Page 16, Paragraph 56, lines 1-10 & Specification, Page 16, Eq. 14 & Specification, Page 17, lines 1-14 & Fig. 3, elements 324, 328) {Interpretation: The reference discloses calculating a plurality of format metrics (MAP metric) for each of the plurality of hypothesized messages i.e. for each of the plurality of transport formats or rates based on the plurality of Viterbi (viterbi decoder " $E_{VD}(n_c)$ ") metric values}; comparing the calculated format metrics; and based on the comparison, determining a probable transmitted format from the set of possible formats (Abstract, lines 5-6 & Specification, Page 2, Paragraph 10, lines 3-6 & Specification, Page 3, lines 1-4 & Specification, Page 5, Paragraph 24, lines 6-7) {Interpretation: The reference discloses selecting the message with the best MAP metric therefore, comparing the MAP metric of each of the hypothesized formats is inherent}. Chi further discloses implementing the method using a processor (Specification, Page 20, Paragraph 72 & Specification, Page 21, lines 1-5). Chi further discloses functions and processing implemented with software executed on a processor (Specification, Page 20, Paragraph 72) {Interpretation: The reference discloses a processor comprising software executing the process. Furthermore, a memory is inherent in a DSP which stores the instructions for executing the steps}.

In regards to Claims 7 & 18, Chi discloses a method comprising: calculating a plurality of Viterbi metric values for a plurality of possible format parameters (Specification, Page 8, Paragraph 29, Eq. 6 & Specification, Page 12, Paragraph 46 & Specification, Page 13, lines 1-9 & Specification, Page 16, Paragraph 56, lines 1-10 & Specification, Page 16, Eq. 14 & Specification, Page 17, lines 1-14 & Fig. 3,

element 324) {Interpretation: The reference discloses calculating a plurality of Viterbi (viterbi decoder " $E_{VD}(n_c)$ ") metric values}; calculating a format metric for said possible format parameters, using the respective calculated Viterbi metric values and a decision level variable (Abstract, lines 1-8 & Specification, Page 2, Paragraph 9 & Specification, Page 8, Paragraph 29, Eq. 6 & Specification, Page 12, Paragraph 46 & Specification, Page 13, lines 1-9 & Specification, Page 16, Paragraph 56, lines 1-10 & Specification, Page 16, Eq. 14 & Specification, Page 17, lines 1-14 & Fig. 3, elements 324-328) {Interpretation: The reference discloses calculating a plurality of format metrics (MAP metric) for each of the plurality of hypothesized messages i.e. for each of the plurality of transport formats or rates based on the plurality of Viterbi (viterbi decoder " $E_{VD}(n_c)$ ") metric values and a decision level variable (" $V$ " signal estimate &  $\sigma^2$ )}; and determining a probable transmitted format by comparing the calculated format metrics for the possible format parameters (Abstract, lines 5-6 & Specification, Page 2, Paragraph 10, lines 3-6 & Specification, Page 3, lines 1-4 & Specification, Page 5, Paragraph 24, lines 6-7) {Interpretation: The reference discloses selecting the message with the best MAP metric therefore, comparing the MAP metric of each of the hypothesized formats is inherent}. Chi further discloses implementing the method using a processor (Specification, Page 20, Paragraph 72 & Specification, Page 21, lines 1-5).

In regards to Claim 2, Chi discloses a method as described above. Chi further discloses determining a plurality of possible data bit values for a transmitted data block with an unknown transmission format (Abstract, lines 1-5 & Fig. 3, element

"m", 324 & Specification, Page 4, Paragraph 20-21) {Interpretation: The reference discloses determining the possible data values (this is output of the decoder i.e. decoded message which are the decoded binary symbols which correspond to bits depending on the modulation, and are mapped into codewords (blocks) with an unknown format to the receiver.)}.

In regards to Claims 4, 15 & 28, Chi discloses a method (device / storage medium) as described above. Chi further discloses using a probable transmitted format to decode a transmitted block of data (Fig. 3, elements 324, 328, " $n_c$ " & Abstract, lines 5-6 & Specification, Page 3, lines 1-5 & Specification, Page 13, lines 6-9) {Interpretation: The reference discloses the decoder receives a probable format from the MAP calculator so as to decode the data based on the format as received}.

In regards to Claims 5, 16 & 29, Chi discloses a method (device / storage medium) as described above. Chi further discloses determining the highest format metric calculated (Specification, Page 5, Paragraph 24 & Specification, Page 5, Paragraph 33, lines 4-5) {Interpretation: The reference discloses selecting the best metric to determine the transmitted message, and further the MAP metric maximizes the joint a posteriori probability, therefore the format with the highest MAP metric is selected.}.

In regards to Claims 9-11 & 20-22, Chi discloses a method (device) as described above. Chi further discloses basing the decision level variable on an amplitude value and a noise standard deviation and the number of bits for various possible formats (Fig. 3, element 326, " $V$ ", " $\sigma^2$ " & Specification, Page 14, Eq's. 11, 12 &



Specification, Page 15, lines 1-20) {Interpretation: The reference discloses the variable "V" to represent the estimate symbol energy which is interpreted as symbol amplitude and the variable " $\sigma^2$ " to the estimate of the noise variance i.e. noise standard deviation squared. Furthermore, the variable "V" represents the estimated energy of the signal component per symbol wherein depending on the modulation and / or encoding (format) there are a fixed number of bits per symbol, thus the variable is based on the bits and differs depending on the formats}.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chi et al. (WO 02/060083 A2) in view of Anderson et al. (6,161,013).

In regards to Claim 24, Chi discloses a method (device) comprising: calculating a plurality of format metric values based on a coding rate for a plurality of calculated Viterbi metric values (Abstract, lines 1-8 & Specification, Page 2, Paragraph 9 & Specification, Page 8, Paragraph 29, Eq. 6 & Specification, Page 12, Paragraph 46 & Specification, Page 13, lines 1-9 & Specification, Page 16, Paragraph 56, lines 1-10 & Specification, Page 16, Eq. 14 & Specification, Page 17, lines 1-14 & Fig. 3, elements 324, 328) {Interpretation: The reference discloses calculating a plurality of format metrics (MAP metric) for each of the plurality of hypothesized messages i.e.

for each of the plurality of transport formats or rates based on the plurality of Viterbi (viterbi decoder " $E_{VD}(n_c)$ ") metric values}; comparing the calculated format metrics; and based on the comparison, determining a probable transmitted format from the set of possible formats (Abstract, lines 5-6 & Specification, Page 2, Paragraph 10, lines 3-6 & Specification, Page 3, lines 1-4 & Specification, Page 5, Paragraph 24, lines 6-7) {Interpretation: The reference discloses selecting the message with the best MAP metric therefore, comparing the MAP metric of each of the hypothesized formats is inherent}. Chi further discloses implementing the method (device) using a processor (Specification, Page 20, Paragraph 72 & Specification, Page 21, lines 1-5). However, Chi does not disclose a dipole antenna.

Anderson discloses a cellular wireless communications system comprising multiple cell sites and mobile stations (Fig. 1A, elements 101, 104, 102 & Fig. 1C, elements 104, 102). Anderson further discloses implementing a dipole antenna employed a user (mobile) station (Column 12, lines 7-12). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Anderson teaches implementing a dipole antenna and this is implemented in the device (receiver) as described in Chi so as to implement the receiver in a mobile station so as to provide an antenna with a desired (small) form factor to receive reliable communication path.

In regards to Claim 25, Chi discloses a method (device) as described above. Chi further discloses determining a plurality of possible data bit values for a transmitted data block with an unknown transmission format (Abstract, lines 1-5 & Fig. 3,

element "m", 324 & Specification, Page 4, Paragraph 20-21) {Interpretation: The reference discloses determining the possible data values (this is output of the decoder i.e. decoded message which are the decoded binary symbols which correspond to bits depending on the modulation, and are mapped into codewords (blocks) with an unknown format to the receiver.)}.

In regards to Claim 26, Chi discloses a method (device) as described above. Chi further discloses using a probable transmitted format to decode a transmitted block of data (Fig. 3, elements 324, 328, " $n_c$ " & Abstract, lines 5-6 & Specification, Page 3, lines 1-5 & Specification, Page 13, lines 6-9) {Interpretation: The reference discloses the decoder receives a probable format from the MAP calculator so as to decode the data based on the format as received}.

13. Claims 3 & 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chi et al. (WO 02/060083 A2) in view of Pedersen et al. (2006/0176976 A1).

In regards to Claims 3 & 14, Chi discloses a method (device) as described above. However, Chi does not disclose identifying a set of possible format parameters from a transmitted data block header.

Pedersen discloses identifying a set of possible format parameters from a transmitted data block header (Specification, Page 1, Paragraph 4, lines 7-20 & Paragraph 5, lines 3-6 & Paragraph 7, lines 2-6 & Paragraph 68, lines 3-5) {Interpretation: The reference discloses implementing a Transport Format Combination Indicator (TFCI) in the layer 1 header so as to provide information to the receiver regarding the format of the data block i.e. number of data bits coding

etc.}. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Pedersen teaches identifying a set of possible format parameters from a transmitted data block header and this is implemented in the method as described in Chi so as to be able to transmit / receive data block of various formats (coding) depending on various different communications protocols.

### ***Conclusion***

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, it is recommended to the applicant to amend all the claims so as to be patentable over the cited prior art of record. A detailed list of pertinent references is included with this Office Action (See Attached "Notice of References Cited" (PTO-892)).

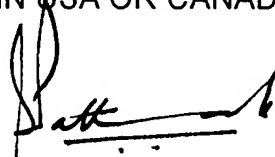
15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhanshu C. Pathak whose telephone number is (571)-272-3038. The examiner can normally be reached on M-F: 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571)-272-3042.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Sudhanshu C. Pathak  
Examiner  
Art Unit 2611